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10/727,467	12/04/2003	Joerg Ulrich Fontius	P03.0554	7491

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SCHIEF HARDIN & WAITE  
Patent Department  
6600 Sears Tower  
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EXAMINER
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RAHM/JOO, MAN/CHER

ART UNIT	PAPER NUMBER
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2624

MAIL DATE	DELIVERY MODE
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09/02/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/727,467

**Applicant(s)**

FONTIUS, JOERG ULRICH

**Examiner**

MIKE RAHMJOO

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 48-63 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48-63 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S5/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 48- 63 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As per claim 48 applicant recites "...outwardly spaced from said 3D volumetric 3D space visualization...". Examiner fails to see any teachings of an "outwardly spaced from said 3D volumetric space" throughout the entire specification and therefore the claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 48- 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosman (US Patent 6006126) in view Neff et al (US PAP 2002/ 0180728), hereinafter, Neff and further in view of of Nissen (US PAP 2003/ 0001869).

As per claim 48 Cosman implicitly teaches a volumetric 3D monitor which shows the 3D volumetric visualization in 3D space (i.e., fig. 8- 10 and 16 and the *three dimensional representation of image scan data*. Col. 25 line 40 also teaches *3D volumetric views on computer graphic workstation display. Examiner reads said representation as corresponding to visualization*) surrounded by an associated surface or surfaces (i.e., boney anatomy of fig. 16) on which a reference point (i.e., points 1040 1041 1044 and 1046 of fig. 16) is definable with respect to said 3D visualization (i.e., 3D volumetric visualization in col. 25 line 40) shown by the monitor corresponding to for example column 25;

Cosman teaches a selection unit (corresponding to physical coordinate detection system of fig. 12a) to select a reference point (corresponding to any points such as 920, 922, 926, or 928 of the skull) on the surface or surfaces relative to the 3D volumetric visualization on the 3D monitor of the three dimensional data set selected by the user (corresponding to the selection of the points on a visualization of the patient's head on an XYZ (i.e., 3D) coordinate system) see for example column 19 lines 40- 67 and fig. 12a. The perimeter 932 illustrate a 3D cube crosses said points;

a direction unit to specify a direction (corresponding to coordinate system XYZ of 12a) from said reference point to said point being selected by the user in the 3D volumetric visualization on the volumetric 3D monitor corresponding to for example column 19 lines 40- 67 and fig. 12a wherein the coordinates are registered or known relative to the coordinate system (i.e., specifying the directions).

However, Cosman does not explicitly teach the 3D volumetric visualization in 3D space surrounded by associated surface or surfaces outwardly spaced from said 3D volumetric 3D space visualization on which a reference point is definable with respect to said 3D visualization.

Neff teaches teach a volumetric 3D monitor (fig. 1- 3 and the 3D hybrid screen) which shows the 3D volumetric (i.e., 3D seismic data) visualization surrounded by associated surface or surfaces spaced from said 3D volumetric 3D space visualization (i.e., flat wall, a wraparound, or various combinations of flat walls, with or without a floor or a dome shaped ceiling in [0069]). Fig. 8- 10 and [0069] teach the flow chart of importing 3D data (i.e., points) which to be visualized to provide the 3D seismic data volume which utilizes said 3D hybrid screen (i.e., volumetric 3D monitor).

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Neff into Cosman to facilitate viewing on four commonly used screen types including: a flat wall, multiple adjacent flat walls, a concave semidome, and a semi-cylindrical wraparound screen which are combined into a single screen referred to herein as a "hybrid" screen therefore use multiple projectors to project adjoining images on adjacent sections of a large

wraparound screen so that observers can view objects with depth perception in 3D space see for example [0022] and [0007].

Cosman does not teach a distance unit to set a distance value from said reference point along said direction to said point being selected in the visualization.

Nissen teaches a distance unit (i.e., image window tool of fig. 1) to set a distance value from said reference point along said direction to said point being selected in the visualization (corresponding to for example determination of distance and direction from the reference point from the sensor point of which an input is read) see for example [0016].

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Nissen into modified device of Cosman so as to provide the reference points being visualized on the screen so that the user can visually see which point is being used for calculation of the resizing, therefore when one corner of the screen defines the reference point and as the user touches the screen in order to resize the object, the distance and direction between the touch point and this reference point is calculated for resizing and visualizing the resized object which adds to the efficiency and marketability of the device see for example [0020- 25].

As per claim 49 Cosman teaches said surface or surfaces (i.e., 3D volumetric views) is virtual corresponding to for example col. s5 line 40.

As per claim 50 Cosman teaches the selection unit comprises a positioning unit to position the reference point on the surface or surfaces(corresponding to points

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834,836,838,840) and a sensor (detectors 800 and 798), the sensor registering a position of the reference point on the surface or surfaces corresponding to for example fig. 9A wherein the detector system tracks the position of the probe and the probe tip and has a basis of data, e.g. "knows," when the probe touches these points.

As per claim 51 Cosman teaches wherein the selection unit comprises a mouse, and a movement of the mouse (corresponding to the use of a mouse) registered by the mouse corresponding to a movement of the reference point on the surface or surfaces corresponding to for example col. 17 lines 60- 65.

As per claim 52 Cosman teaches wherein the direction unit comprises a level tiltable (joystick and the tiltable level) in a direction and a sensor, the sensor registering a tilting of the level in the direction corresponding to for example col. 17 lines 60- 65.

As per claim 53 Cosman teaches wherein the direction unit comprises a joystick tiltable in two directions(joystick with inherent tilting) , tilting of the joystick unambiguously specifying two angles for direction specification corresponding to for example col. 17 lines 60- 65.

As per claim 55 Cosman teaches wherein the selection unit and the direction unit comprise a pointer wand whose position and orientation specify at least one of the reference point and the direction with respect to the visualization corresponding to for example col. 15 lines 60- 67 wherein the probe (unit 808) has a tip or position or virtual tip 814 which may touch off a point of an arbitrary nature 834 (corresponding to reference point).

As per claim 56 Cosman teaches wherein at least one of the position and orientation of the pointer wand is measurable by means of ultrasonic elapsed-time measurements corresponding to for example. Col. 26 lines 35- 40 wherein the ultrasonic probe may send out the ultrasonic signal, may receive the reflected ultrasonic signal and determine a time delay between sending and receiving so as to determine the distance,

Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over the modified device of Cosman further in view of Taft (US Patent 6169537).

As per claim 54 the modified device of Cosman does not teaches the joystick is structurally connected with a mouse.

However, Taft teaches the joystick is structurally connected with a mouse corresponding to for example fig. 2a units 12 (joystick movable in XY directions) and 30 (conventional mouse).

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings Taft into Cosman to have a mouse assembled into joystick to partially overcome particular concern the awkward and unnatural hand position required to hold and control a computer mouse and therefore avoid great discomfort if a mouse is used for hours at a time and in extreme instances, serious hand and/or wrist injury, such as the infamous and debilitating carpal tunnel syndrome see col. 1 lines 30 – 40.

Claims 57- 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified device of Cosman further in view of Sekiguchi et al (US PAP 2002/ 060665).

As per claim 57 Cosman does not teach at least two ultrasonic transmitters, and the input system additionally comprises a receiving unit to receive ultrasonic signals and a synchronization unit to synchronize the ultrasonic transmitters and the receiving unit.

Sekiguchi teaches at least two ultrasonic transmitters, and the input system additionally comprises a receiving unit to receive ultrasonic signals and a synchronization unit (see for example claim 9 for the synchronization unit) to synchronize the ultrasonic transmitters and the receiving unit corresponding to for example [0144] wherein two ultrasonic transmitters may be attached to the receiving unit.

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Sekiguchi into Cosman to provide a coordinate input apparatus capable of making a coordinate input from a plurality of input planes and when the line connecting the two ultrasonic receivers is perpendicular to the input plane, the distances from the input device in the input plane to the two ultrasonic receivers exist in a plurality of sets and therefore the sufficiently practicable coordinate input device can be provided for precision and efficiency of the device see [0012].

As per claim 58 Sekiguchi teaches wherein the synchronization unit is

connected by a radio connection with the ultrasonic transmitters of the pointer wand corresponding to for example [0144].

As per claim 59 Sekiguchi teaches at least two ultrasonic reflectors (corresponding to R1,R2 receiving the ultrasonic transmitted from the input unit 4), and the input system additionally comprises an ultrasonic transmitter, a receiving unit to receive ultrasonic signals, and a synchronization unit to synchronize an ultrasonic transmitter and a receiving unit corresponding to for example [0056]. Cosman also teaches light source in forms of various sources as reflectors see the abstract.

As per claim 60 Sekiguchi teaches wherein the ultrasonic reflectors are designed such that they reflect an ultrasonic pulse with at least one of different strength and with characteristic pulse form, depending on a frequency of the ultrasonic pulse corresponding to for example fig. 7 and the ultrasonic pulse form.

As per claim 61 Sekiguchi broadly teaches wherein the distance unit comprises a rotatable small wheel (corresponding to unit 17) and a sensor to detect rotation corresponding to for example fig. 4a.

As per claim 62 Sekiguchi broadly teaches wherein the input system also comprises a button to actuate a signal corresponding to for example personal computer 1 with on and off button.

As per claim 63 Sekiguchi an output unit to output a signal that comprises preferred information about at least one of the reference point, the direction and the

distance value corresponding to for example claim 4 and the input and output coordinates or directions.

### ***Response to Arguments***

Applicant's arguments filed 07/28/08 have been fully considered but they are not persuasive.

In response to applicant's remarks on page 5 where applicant recites "Examiner relies on the disclosure at column 25, line 40 of Cosman which states that the image scan data of the patient's anatomy may be displayed in slices or three-dimensional volumetric views on a computer graphic workstation display", examiner would point to the recited portions made of the reference to further clarify the rejection. said portions clearly point to fig. 8-1 01 and 16 and the reference points (i.e., 1040, 1041, 1044 and 1046) pointed out are clearly described in column 25 lines 1- 40. fig. 12a of Cosman is also a 3D representation of said 3d visualization as claimed by applicant.

Applicant further states "Applicant agrees that Cosman does not teach this" referring to the 3D visualization. Examiner disagrees and points out that said teaching is implicit to Cosman and the citation pointed to with reference to fig. 16 along with reference points as well as fig. 12a is a clear implicit teaching of the pertaining portions of the claim.

Applicant further states "To satisfy this critical deficiency of Cosman, the Examiner relies Neff which in the field of geology shows a bore hole such as in the earth on a concave screen" and "this concave screen is clearly not showing a 3D *volumetric* visualization in 3D space" and further "one skilled in the art would never combine a curved concave screen from in the art did make this combination, one would simply substitute the concave screen of Neff for the two-dimensional monitor D in Cosman".

In response examiner fails to see why a concave screen fails to satisfy "a 3D volumetric visualization in 3D space" and how applicant concludes the screen of Cosman fails to qualify as a "3D visualization". As pointed out in the rejection and as per examiner analogy of Cosman said aspect of the claimed invention is clearly taught.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

In response to applicant's remarks on page 6 wherein applicant recites "the second critical way in which claim 48 distinguishes is by reciting an associated surface or surfaces *outwardly spaced* from said 3D volumetric space", examiner fails to see any teachings of an "outwardly spaced from said 3D volumetric space" throughout the entire specification. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to incorporate a concave screen because applicant has not disclosed that surface or surfaces outwardly spaced from said 3d volumetric space provides an advantage, is used for a particular purpose or solves a stated problem.

One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally as well with a concave screen.

Therefore, it would have been made obvious to one of ordinary skill in the art to modify the modified system of Cosman to obtain the invention as specified in claim 48.

In response to applicant's remarks on page 6 wherein applicant recites "a third important difference is that in Cosman the reference points are on the patient himself, not on a surface spaced from *an image*", examiner fails to see said citation as claimed.

In response to applicant's remarks on page 7 wherein applicant recites "Nissen determines the distance and direction from a reference point to a selected point on the two-dimensional computer screen" and this is irrelevant to that of a 3D visualization space. Examiner points out to the underlined portion as admitted by applicant and the fact that Nissen is brought in to cover said deficiency.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### **Inquiry**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is 571-272-7789. The examiner can normally be reached on 8 AM- 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Rahmjoo

August 28, 2008

/Matthew C Bella/

Supervisory Patent Examiner, Art Unit 2624